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长方体破片对金属薄板的极限穿透速度研究(PDF)

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Title: The Research on the Limiting Penetration Velocity of Cuboids Fragment to Metallic Sheet

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关键词: 破片; 极限穿透速度; 理论计算; 数值模拟

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摘要: 分析了长方体破片穿透薄板的影响因素,对穿透薄板的极限穿透速度进行了理论推导; 基于文中的理论模型,对典型破片穿透1.5mm薄铝合金板的极限穿透速度进行了理论计算,并在AUTODYN中进行了数值模拟。结果表明,数值模拟和理论计算误差较小,证明了结果的可行性。

Abstract: The factors that influence fragments penetrating sheet were analyzed, the limiting velocity of sheet penetration was deduced. Based on the theoretic model, the theoretic limiting velocity of penetration of the typical fragment impacting on the 1.5mm aluminum alloy sheet was calculated, and then numerical simulation was conducted in the AUTODYN software. The results show that the error between numerical simulation and theoretic calculation is very small, which proves the feasibility of the results.

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